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Short Communication

Extension of host range for *Anilocra dimidiata*, *Nerocila sigani* and first record of *Nerocila depressa* (Isopod: Cymothiod) from Odisha coast, India

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This report of parasitic isopod *Anilocra dimidiata* from the host *Karalla daura* and *Nerocila sigani* from the host *Lutjanus lutjanus* signifies their host range extension. Further, the report of *Nerocila depressa* from the host *Selaroides leptolepis* is the first record for the state of Odisha.

[**Keywords**: Host extension, Isopod, New record, Odisha coast]

Introduction

The isopods of the genus *Anilocra* and *Nerocila* are the external cymothiods known to inflict range of effects on the scale, pigmentation of the body surface, epidermis, bone, connective tissues and also induce behavioural changes of the host fishes[1-4]. The isopods of the genus *Anilocra* is comprised of 50 species, out of which three species *viz*., *Anilocra dimidiata* Bleeker 1857, *Anilocra longicauda* Schiödte & Meinert 1881 and *Anilocra leptosoma* Bleeker 1857 were reported from Indian water[5]. The species *A. dimidiata* has been reported from the host *Sardinella longiceps* Valenciennes, 1847, *Psettus* spp., *Phtopectoralis bindus* (Valenciennes, 1835), *Nemipterus* spp., *Epinephelus* spp. and *Lactarius lactarius* (Bloch & Schneider 1801)[6].

The genus *Nerocila* is composed of 65 species, out of which 17 nominal species were reported from Indian water[7]. The isopod *Nerocila sigani* Bowman and Tareen, 1983 parasite was reported from the host fish species viz., *Siganus canaliculatus* (Park, 1797), *Parastromateus nige* (Bloch, 1795) and *Terapon theraps* Cuvier, 1829. An earlier study reported the parasitic nature of *Nerocila sigani* in the host *Terapon theraps* from the coastal water of Odisha[8]. The species *Nerocila depressa* Milne Edwards, 1840 was reported from the host *Opisthopterus tardoore* (Cuvier, 1829), *Selaroides leptolepis* (Cuvier, 1833) and its geographical distribution is limited to Tamil Nadu coast[7, 9].

Materials and Methods

Parasitic isopods were collected along with their host fish species (Fig. 1 A–G) during the month of December, 2018 from Haripur fish landing centre (19° 15′ 43.22"N, 84° 54′ 50.01″ E), Gopalpur-on-Sea, Odihsa coast, India. The host species *Karalla daura* (Cuvier,1829) was parasitized by *Anilocra dimidiata*, *Lutjanus lutjanus* Bloch, 1790 and *Siganus canaliculatus* (Park, 1797) were parasitized by *Nerocila sigani* and the isopod *Nerocila depressa* was found attached to the body surface of host species *Selaroides leptolepis.* All these parasites were gently pulled out from the host body and preserved in 70 % alcohol. The parasites are deposited in the national repository of Estuarine Biology Regional Centre, Zoological Survey of India, Gopalpur-on-Sea, Odisha, India. The host fish taxonomy and nomenclature was according to FishBase[10]. The parasites were identified based on the standard keys and description[6,7,11,12].

Results

Systematics

Order: Isopoda
Family: Cymothoidae
Genus: Anilocra

1. *Anilocra dimidiata* Bleeker, 1857 (number of specimens examined: 01 female, registration number: EBRC/ZSI/Cr-10968): Total length (head to telson): 25.07 mm; total width (at 5th pereonite): 7.51 mm, number of pereonite: 07, number of pleonite: 05, length of pleotelson: 5.65 mm and width of pleotelson: 5.32 mm.

Description

Body is 3.33 times as elongated as width. The coxa is barely visible in dorsal view. Eyes are distinct and large with facets. Posterolateral margin is not produced at any pereonite. Sixth pereonite is longest. 1st, 5th and 7th pereonite sub-equal in length. Pleonite 1

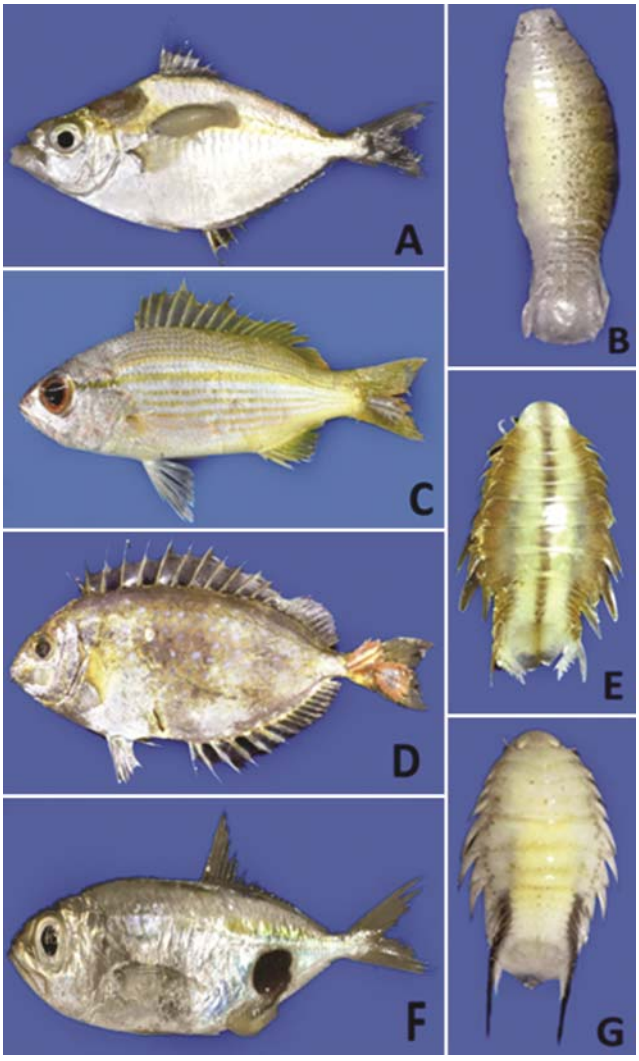

Fig. 1 — (A-G) Cymothoid isopods with their host. A) *Anilocra dimidiate* (female) with the host *Karalla daura*. B) *Anilocra dimidiata* (female). C) *Nerocila sigani (female)* with the host *Lutjanus lutjanus*. D) *Nerocila sigani* (female) with the host *Siganus canaliculatus*. E) *Nerocila sigani* (female). F) *Nerocila depressa* with host *Selaroides leptolepis*. G) *Nerocila depressa*

is longest and pleonite 1–5 don't have posterolateral margin. Pleotelson lateral margin turned up and with caudomedial lobe. Antennule with 7 numbers of articles which are extending up to the eye. Antenna with 10 numbers of articles extending up to pereonite 2. Body is white in colour; however half of the body is covered with chromatophores.

2. *Nerocila sigani* Bowman & Tareen, 1983 (number of specimens examined: 03 female, registration number: EBRC/ZSI/Cr-10969): Total length (head to telson): 15.44–21.61 mm (mean: 19.54 mm); total width (at 5th–6th pereonite): 8.05–11.48 mm (mean: 9.61 mm); number of pereonite: 07; number of pleonite: 05; length of pleotelson: 4.1–5.37 mm (mean: 4.75 mm) and width of pleotelson: 3.14– 5.82 mm (mean: 4.74 mm).

Description

Boby is 1.8–2 times as elongated as width and widest in between 5th and 6th pereonite. Cephalon is as elongated as width with rounded frontal margin. Eyes with facets almost indistinct. Pereonites 1st, 5th, 6th and 7th are subequal in length, pereonite 2–4 short and 4th is shortest. There is a depression seen on the venterolateral margin of pereonite 1–4. Coxae of pereonite 2–7 are visible in dorsal view. Pereonite coxae 6-7 are longest. Posterolateral margins produced backward. Pleonites are visible having posterolateral projections. Pleonite 1 is shortest and 2–5 are subequal in length. Pleotelson is as elongated as width smoothly rounded without caudomedial lobe. Antennule with 8 articles and antenna with 10 articles extending up to 1st pereonite. Body is white in colour and there also present a distinct venterolateral margin extending from cephalon to pleotelson.

3. *Nerocila depressa* Milne Edwards, 1840 (number of specimens examined: 01 female, registration number: EBRC/ZSI/Cr-10970): Total length (head to telson): 19.32 mm; total width (at 5th pereonite): 8.32 mm; number of pereonite: 07; number of pleonite: 05; length of pleotelson: 4.25 mm and width of pleotelson: 5.31 mm

Description

Body is about 2.3 times as elongated as width. Cephalon apex margin is rounded. Eyes are not visible. Coxae of pereonite 2–7 are visible in dorsal view. The posterolateral margines of pereonites 1–7 are produced. Fifth pereonite is the widest and longest. Pleonites are distinct with posterolateral margins produced backward. First pleotelson is shortest and 2–5 are subequal. Pleotelson is sub-triangular in shape. It has two long distinct caudal projections. Antennule with 8 articles and antenna with 10 articles. Antennule and antenna extending up to the posterior portion of cephalon. Body is white in colour with Cephalon, lateral portion of the pereonites, pleonites and uropod projections are having black green chromatophores.

Discussion

The present study provides the first material evidence regarding the occurrence of the isopod

parasite *Anilocra dimidiate* from the host *Karalla daura* and the record of the parasite *Nerocila sigani* from the host *Lutjanus lutjanus*, which confirms the range extension of host for these parasite. Further, the report of *Nerocila depressa* from the host *Selaroides leptolepis* is the first record for the state of Odisha. These parasites are economically important as they are causing considerable damage to the fisheries resources, so it is high time to carry out a comprehensive long term study on the isopods parasites and their impact assessments on host fishes along the Odisha coast, India.

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Conflict of Interest

Authors don't have any conflict of interest.

Author Contributions

AKB & SRM: Collection, preservation and identification and manuscript preparation. JKS & AM: Identification, manuscript preparation and critical analysis.

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